Introduction

The Tennessee Department of Education (TDOE) developed the TNReady assessments to measure the current mastery of students on the Tennessee state academic standards and their progress toward college and career readiness. In order to complete the reporting of achievement data, it is necessary to develop cut scores that will be used to assign students to performance categories on the TNReady assessments. These cut-scores are the basis of a criterion-referenced assessment, in which student performance is judged based on the expectations determined by content experts who are educators in Tennessee. During the week of August 22, 2016, panels of Tennessee educators convened in Nashville, TN to recommended cut scores for the TNReady assessments. Ten (10) assessments were included in these workshops:

- English I, II, and III
- Algebra I and II
- Integrated Math I, II, and III
- Geometry
- United States History

For each assessment, student performance will be reported using four performance categories, which require setting three cut scores.

Panelists

A total of 86 educators from the state of Tennessee participated as panelists in the standards setting workshop. The panelists were recruited for participation starting in the spring of 2016 with the intent to represent the full diversity of educators in Tennessee. Panelists included high school teachers, administrators, and representative from higher education. The panelists were organized into five distinct groups in order to complete the work. The five panels are included in the table below.

Panel	# of panelists	Assessments
1	18	English I, II, and III
2	14	Integrated Math I, II, and III
3	18	Algebra I and II
4	18	Geometry
5	14	US History

Process

In order to develop the cut score recommendations, the *bookmark* standard setting process was followed (Lewis, Mitzel, Mercado, & Schulz, 2012). The Bookmark Method is a three-round standard setting process that requires panelists to independently examine test items and place bookmarks at the points at which they consider students to have demonstrated sufficient knowledge and skills at each performance level. The Bookmark process is an item-mapping procedure that is one of the most widely used standard setting methods in statewide assessments. This method has been used in Tennessee for more than a decade.

The first phase of the standards setting process allowed the panelist the opportunity to review a test form to become familiar with the knowledge and skills measured. After reviewing the assessments, panelists moved to the second phase in which they worked together to qualitatively define the threshold that would

describe students who were just barely at each performance category. The third phase began with training on the bookmark method and a practice round to ensure panelists were comfortable with the process.

After completing the practice round, panelists were presented with the Ordered Item Booklet to be used to complete their ratings and began their Round 1 rating of the 3 round process. Upon completion of each round panelist were provided a number of key pieces of feedback. The feedback included:

- The minimum, maximum and median recommendation received from each panelists group
- The distribution of recommendations received across all panelists
- The difficulty level of items

The panelists' work concluded with recommended performance levels of Below, Approaching, On Track, and Mastered.

The Technical Advisory Committee (TAC), comprised of seven nationally recognized assessment experts, convened on April 27-28, 2016 and approved the standards setting process for the TNReady assessments. The TAC determined that the process was of high standards and that the department and state board should feel confident in the panelists' recommendations.

Recommended Cut Scores

All tests have a scale score range from 200-450.
The minimum scale score for each content area is 200 (the "cut score" for level 1) and the maximum scale score is 450 (the highest score for level 4).

English I				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	302	328	347
Percent and Number of students	TBD	TBD	TBD	TBD

English II				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	303	318	334
Percent and Number of students	TBD	TBD	TBD	TBD

English III				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	314	333	347
Percent and Number of students	TBD	TBD	TBD	TBD

Algebra I				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	317	338	355
Percent and Number of students	TBD	TBD	TBD	TBD

Algebra II				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	311	327	348
Percent and Number of students	TBD	TBD	TBD	TBD

Integrated Math I				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	312	330	351
Percent and Number of students	TBD	TBD	TBD	TBD

Integrated Math II				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	301	324	353
Percent and Number of students	TBD	TBD	TBD	TBD

Integrated Math III				
Achievement Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	306	338	359
Percent and Number of students	TBD	TBD	TBD	TBD

Geometry				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	314	333	346
Percent and Number of students	TBD	TBD	TBD	TBD

U.S. History				
Performance Level	Level 1 Below	Level 2 Approaching	Level 3 On Track	Level 4 Mastered
Scale Score	200	327	342	354
Percent and Number of students	TBD	TBD	TBD	TBD